



Vocal Cord Dysfunction (Also Known as Paradoxical Vocal Cord Motion, PVFM)

To understand vocal cord dysfunction (VCD) [or paradoxical vocal fold motion (PVFM)], it is helpful to understand how the vocal cords function. The vocal cords are located at the top of the windpipe (trachea) and vibrate from exhaled air to produce noise and voice. Breathing causes the vocal cords to open, allowing air to flow through the windpipe (trachea) and into the lungs. With VCD, the vocal cords close together, or constrict, during inhalation or exhalation. This leaves only a small opening for air to flow through the windpipe and causes asthma-like symptoms.

History of VCD/PVFM

The discovery of VCD/PVFM is relatively new. It first appeared in medical literature in 1951. Through the years, VCD has had many names, including factitious asthma, mimicking asthma, irritable larynx and laryngeal dysfunction.

In 1983, doctors at National Jewish Health described a condition that may be confused with asthma. This condition is called Vocal Cord Dysfunction, or VCD. People with VCD will report asthma-like symptoms to their doctors.

What are the symptoms of VCD?

Symptoms of VCD include:

- Shortness of breath
- Chest and/or throat tightness



- Chronic cough
- Frequent throat clearing
- Intermittent hoarseness
- Wheezing/stridor
- Difficulty with inhalation and/or exhalation, Feeling of "breathing through a straw"

These symptoms are a result of an abnormal closing of the vocal cords (VCD) rather than inflammation of their airways (asthma). Based on these symptoms, many people with VCD may be diagnosed with asthma and treated with asthma medications, including oral steroids. Since VCD is not asthma, the symptoms do not improve or only minimally improve with this treatment. When VCD is not identified, patients are often treated with asthma medications. They may develop significant side effects. These are often seen with long-term use of oral steroids, without much benefit. Incorrect diagnosis and treatment may also lead to frequent emergency room visits and hospitalizations, even intubation. An important factor to be aware of is that some people have a combination of asthma and VCD.

What happens with VCD?

To understand VCD, it is helpful to know how the vocal cords function. The vocal cords are located at the top of the windpipe (trachea) and vibrate from exhaled air to produce noise and voice. Breathing in and out causes the vocal cords to open allowing air to flow through the windpipe (trachea). However, with Vocal Cord Dysfunction, the vocal cords close together, or constrict, during one or both parts of the breathing cycle. This leaves only a small opening for air to flow through to the windpipe and causes asthma-like symptoms.

How is VCD diagnosed?

Making a diagnosis of VCD can be difficult. If your doctor suspects VCD you will be asked many questions about your symptoms. Common symptoms include a chronic cough, chronic throat clearing, shortness of breath, difficulty breathing, chest tightness, throat tightness, intermittent hoarseness and wheezing. Many people diagnosed with VCD complain that they "difficulty getting air in."

Many people with VCD have problems with postnasal drip from chronic nasal and/or sinus congestion, gastroesophageal reflux (GER) or laryngopharyngeal reflux (LPR). This relationship may be one of cause and effect because these two conditions can lead to chronic irritation of the throat that then causes the vocal cords to become hypersensitive to irritant stimuli.

Breathing tests like spirometry can be useful in diagnosing VCD, but only if they are done when symptoms are occurring. In the absence of any other complicating conditions like asthma, breathing tests for VCD will be normal. However, if spirometry is conducted when symptoms are present, and if the doctor obtains a "flow volume loop," VCD will cause a flattening of the inspiratory (and/or expiratory) part of the loop.

While spirometry is important and useful, a procedure called a laryngoscopy is the most important test in making the diagnosis of VCD. This procedure is performed by a specialized doctor. Using a flexible tube with a fiber optic camera, the doctor can see how your vocal cords open and close. A

laryngoscopy should be done when you are having symptoms because abnormal vocal cord movements do not occur all the time. Other tests may be done to trigger symptoms so that your doctor can observe your vocal cords when you are having symptoms.

What can trigger VCD symptoms?

Many people who have a diagnosis of vocal cord dysfunction (VCD) [or paradoxical vocal fold motion (PVFM)] may have problems with:

- Postnasal drip
- Gastroesophageal reflux (GER)
- Laryngopharyngeal reflux (LPR)
- Asthma
- Increased body tension with exercise/exertion
- Chronic cough
- Chronic throat clearing
- Dysphagia or difficulty swallowing
- Anxiety

Exposure to irritants such as postnasal drainage associated with nasal and sinus congestion and/or reflux associated with GER/GERD and LPR can lead to chronic irritation of the throat. VCD can also be aggravated by increased chest, shoulder and neck tension while exercising. Chronic cough and frequent throat clearing can further irritate vocal cords contributing to hypersensitivity.

How is VCD treated?

Once diagnosed with VCD, a specific treatment program can begin.

Medical

Changes in medications or initiation of medications, under your doctors order, may control:

- Gastroesophageal reflux (GER)
- Laryngopharyngeal Reflux (LPR)
- Allergies
- Postnasal Drip
- Asthma

Behavioral

Speech therapy is the cornerstone treatment for VCD. Individualized exercises and techniques are taught to help:

- Increase awareness of breathing and remediation of maladaptive breathing patterns
 - Increase awareness of body posture and encourage relaxation of throat muscles
 - Learn and feel comfortable with a variety of VCD release breathing techniques
 - Control VCD while exercising
 - Utilize chronic cough suppression techniques
 - Utilize throat clearing elimination techniques
 - Maximize vocal hygiene
- Techniques and exercises can be extremely helpful in eliminating abnormal vocal cord movement and increasing control of vocal cords thus improving airflow into lungs. The goals of therapy are to teach

you techniques to prevent and eliminate VCD, chronic coughing and frequent throat clearing.

Counseling

Another important part of treatment is supportive counseling. Counseling can help adjust to a new diagnosis and a new treatment program. Counseling can also help identify and deal positively with stress that may be an underlying factor in VCD. Most people with VCD find counseling to be very beneficial.

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